

CLAIMS

1. A single, manually-adjustable hydrofoil and spar truss assembly for stabilizing a sail assisted canoe, kayak, or sailboat of less than 25 feet in overall length, comprising:
 - a. a handle consisting of two pieces of tubing, one of which telescopes into the other permitting the length of said handle to be adjusted,
 - b. a tubular shaft of between five and 10 feet in length connected to said handle at a right angle thereto,
 - c. a hydrofoil approximating the shape of the letter "L" consisting of a vertical portion connected to said tubular shaft at approximately a right angle thereto and a submerged blade portion oriented so as to i) make an angle of approximately 90 degrees with said vertical portion of the hydrofoil, ii) be approximately parallel to both the surface of the water and the tubular shaft when in operation, and iii) make an angle of approximately 90 degrees with said handle when in operation and when viewed from above, and
 - d. a means of positioning said tubular shaft between the main hull of the canoe, kayak, or small sailboat and a small outrigger hull, or ama, such that the tubular shaft remains at approximately a 90 degree angle to the longitudinal axes of both hulls, comprising i) a curved spar or iako connecting said hulls, ii) two or more struts fixed to the iako at their upper ends and having machine screws or a sleeve at their lower ends by means of which the tubular shaft is permitted to rotate around its longitudinal axis, and is prevented from moving longitudinally in relation to the curved spar or iako, such that the entire assembly of handle, foil, tubular shaft, iako, struts, and machine screws/sleeve has but a single moving part that permits continuous manual adjustment of the angle of attack of the foil, and that forms a truss that is strong and light and is resistant to vertical flexion or distortion.
2. A single, manually-adjustable hydrofoil and spar truss assembly for stabilizing a

sail assisted canoe, kayak, or sailboat of less than 25 feet in overall length, comprising:

- e. a handle consisting of two pieces of tubing, one of which telescopes into the other permitting the length of said handle to be adjusted,
- f. a tubular shaft of between five and 10 feet in length connected to said handle at a right angle thereto,
- g. a hydrofoil approximating the shape of the letter "L" consisting of a vertical portion connected to said tubular shaft at approximately a right angle thereto and a submerged blade portion oriented so as to i) be approximately parallel to both the surface of the water and the tubular shaft when in operation and when viewed from above, ii) make an angle of approximately 90 degrees with said handle when in operation and when viewed from above, and iii) make an angle of between 100 degrees and 110 degrees with said vertical portion of the hydrofoil in order to generate not only upward and downward forces to resist heeling when the canoe, kayak, or sailboat is sailed on both port and starboard tacks, but also a sideways or athwartships force vector that will always be directed toward the windward side of the canoe, kayak, or sailboat when beating to windward, regardless of which tack the vessel is on, thereby increasing the vessel's windward sailing performance, and
- h. a means of positioning said tubular shaft between the main hull of the canoe, kayak, or small sailboat and a small outrigger hull, or ama, such that the tubular shaft remains at approximately a 90 degree angle to the longitudinal axes of both hulls, comprising i) a curved spar or iako connecting said hulls, ii) two or more struts fixed to the iako at their upper ends and having machine screws or a sleeve at their lower ends by means of which the tubular shaft is permitted to rotate around its longitudinal axis, and is prevented from moving longitudinally in relation to the curved spar or iako, such that the entire assembly of handle, foil, tubular shaft, iako, struts, and machine screws/sleeve has

but a single moving part that permits continuous manual adjustment of the angle of attack of the foil, and that forms a truss that is strong and light and is resistant to vertical flexion or distortion.

3. A “sidecar” accessory seat or equipment carrying device intended to carry a single passenger or fishing or camping equipment on, and at or near the highest point of, curved, athwartship-oriented, outrigger spars or “iakos” of an outrigger canoe of less than 25 feet of overall length, comprising:

- i. two fore-and-aft rails the ends of which rest on, or snap onto, or are otherwise affixed to said athwartship-oriented outrigger spars or iakos, and
- j. a webbing or fabric sling attached to and suspended between said fore-and-aft rails,

such that i) the weight of the device and the contents thereof is distributed evenly between said fore-and-aft rails and at or near the middle of the athwartship-oriented outrigger spars or “iakos,” contributing to the stability of the outrigger canoe, and ii) the device and the contents thereof are positioned at or near the highest point of said athwartship-oriented outrigger spars or “iakos,” insuring that the device and its contents are positioned as far from the water as possible.